HORSESHOE LAKE BIOASSESSMENT
MARCH, APRIL, AND MAY 2015

Greetings Horseshoe Lake North residents!

Below, please find the latest bioassessment for your lake. Key highlights of this assessment include:

- Hydrilla update
- Invasive vegetation
- Native emergent vegetation
- Restoration Event updates
- Native submersed aquatic vegetation (SAV) found
- Recommendations for you and your lake

3-10-2015

On **March 10th, 2015**, Seminole County Lake Management Program (SCLMP) personnel, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in Horseshoe Lake North.

Hydrilla was observed in the north canal smothered by algae. Hydrilla reproduces from stem fragments, buds, and tubers. Tubers can remain viable in the sediment of the lake for more than 4 years. There are many ways to manage hydrilla. These include: chemical treatment, grass carp fish, mechanical removal, water draw down, and hand removal. The canal will be scheduled for treatment the third week of March to prevent hydrilla from spreading into the lake. More information on hydrilla can be found at http://plants.ifas.ufl.edu/node/183.

Photo: Burhead sedge and alligator weed.

Other invasive species included: alligator weed, water sprite, wild taro, water hyacinth, primrose willow, torpedo grass, burhead sedge, and salvinia. Alligator weed is starting to grow back in small pockets throughout the lake. Four small patches of water hyacinth were spotted. We encourage hand removal of water hyacinth from the lake. This practice will control the population of this invasive plant which has a reputation of spreading rapidly.

Photo: Patch of maidencane.

Native emergent vegetation found during the inspection included: bur marigold, canna, saw grass, pennywort, duckweed, southern watergrass, hemp vine, yellow cow lily, fragrant water lily, climbing aster, maidencane, arrow arum, pickerelweed, duck potato, lizards tail, bulrush, and fire flag. Hemp vine is spreading throughout the trees and bushes of the shoreline.

Native SAV found during the inspection included: Road-grass and baby's tears.
A small but noticeable filamentous algae was present on the south side of the lake.

Photos: Lake bottom debris.

The Secchi measurement (for water clarity) was 3 feet in a total depth of 7.6 feet. The lake elevation was 37.0 ft above sea level at the time of inspection. The grass carp barrier was inspected and found to be clear of debris and in good condition. No grass carp were observed during the inspection.

4-14-2015

On **April 14th, 2015**, Seminole County Lake Management Program (SCLMP) personnel, Thomas Calhoun, Gloria Eby and student intern Henry Lopez surveyed the aquatic plants in Horseshoe Lake North.

Hydrilla was observed in the north canal only at the headwall of the stormwater structure and was found impacted from recent herbicide treatment.

Photo: Treated Canal.

Other invasive species included: alligator weed, wild taro, water hyacinth, primrose willow, torpedo grass, burhead sedge, and salvinia. Alligator weed and bur-head sedge were heavily impacted from the recent treatment.

Photo: Impacted Alligator weed.

Much of the native vegetation planted during the March 28th restoration event was found in good condition. Only a few pop ups were found. Although many of the plants were underwater they should survive. It was noted that there is an increase in both lily pads and maidencane in the lake overall. This should enhance fisheries habitat.

Photos: Duck potato planted during restoration event.

The Secchi measurement (for water clarity) was 2.5 feet in a total depth of 4.9 feet. The lake elevation was 36.71 ft above sea level at the time of inspection. The grass carp barrier was inspected and found to be clear of debris and in good condition. No grass carp were observed during the inspection.

5-13-2015

On **May 13th, 2015**, Seminole County Lake Management Program (SCLMP) personnel, Thomas Calhoun and Joey Cordell, surveyed the aquatic plants in Horseshoe Lake North.

No hydrilla was found during this inspection. Only small amounts of alligator weed and torpedo grass were found in the canal.

Photo: Treated canal.

Other invasive species included: alligator weed, wild taro, water hyacinth, primrose willow, torpedo grass, bur-head sedge, and salvinia. Alligator weed is starting to grow back in small pockets throughout the lake. This and torpedo grass will be targeted during the next herbicide treatment. No water hyacinths were observed during this inspection.

Photo: Free and clear ski dock.

Much of the native vegetation planted during the March 28th restoration event were found in great condition.

Photos: Native vegetation filling in at outfall canal.

Native vegetation including duck potato, pickerelweed, fire flag, lizards tail and southern water grass was found expanding around the lake. Native SAV found included eelgrass, baby's tears and roadgrass. Baby's tear was expanding in many areas. It was noted that both native species button bush and bur-marigold were blooming.

Photo: Bur-marigold blooming.

The Secchi measurement (for water clarity) was 2.4 feet in a total depth of 6 feet. The lake elevation was 36.62 ft above sea level at the time of inspection. The grass carp barrier was inspected and found to be clear of debris and in good condition. No grass carp were observed during the inspection.

Recommendations for you and your lake:

1 Work together with other lakefront owners. Have *at least* one annual lake association meeting, invite guest speakers (such as county or state biologists) and discuss lake specific issues, especially nutrients and lake management recommendations. SCLMP staff would be glad to present our findings from this and other surveys.

2 Continue to establish a beneficial native shoreline for Horseshoe Lake North, especially in locations that are devoid of emergent aquatic plants. Given that some plants are stressed, or did not survive from the previous planting session, the planting of native species should continue until successful establishment is achieved. SCLMP recommends planting in new locations that are shallower and have more sunlight.

3 Native and non-native invasive species sometimes grow very close together, making the non-native species difficult to treat. Non-native species can be hand-pulled from patches of native plants, or a directed herbicide treatment can be used to target the non-native species. Although directed treatments may impact adjacent native species, such herbicides may be necessary to prevent expansion of the non-native species. For overall success in lake management, everyone must become stewards of the lake. Residents should assist whenever possible in the removal of non-native plants in close proximity to native vegetation, and replant the area with beneficial native plants.

4 Utilize the valuable educational outreach programs that are available to you: Shoreline Restoration Workshops, Florida Yards and Neighborhoods (FYN) interactive presentations, and Lake Management Video mail-outs. Implement a media campaign within the community to promote the reduction of personal pollution; encourage residents to decrease their overall fertilizer usage, use only phosphorous-free and slow-release nitrogen fertilizers, keep a functional shoreline with beneficial native aquatic plants, and keep grass clippings out of your lake and the storm drains that lead to the lake. All of these activities aid in protecting your lake! Contact Seminole County Lake Management Program (407) 665-2439 for more information regarding the free educational programs available.

5 Help spread the word! Obtain email addresses from neighbors not currently on the distribution list in order to share these reports. Valuable information is contained within these assessments.

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